I Claim:

1. In an electronic device having a processor coupled to a computer readable memory for implementing steps, a method of calculating a mask for a desired code offset in an LFSR, the method comprising the steps of:

a) receiving the desired code offset from a reference code state chosen for a first field;

b) calculating a first field vector in the first field with the desired code offset sought in the first field; and

c) transforming the first field vector into a second field vector in a second field, the second field vector operable as a mask in the LFSR configured in the first field.

2. The method recited in Claim 1 wherein the first field is a Galois field and the second field is a Fibonacci field.

3. The method recited in Claim 2 wherein transforming step c) comprises the following step:

multiplying the Galois field vector by a transformation matrix to obtain the Fibonacci field vector.

4. The method recited in Claim 3 wherein the transformation matrix is a linear N x N matrix, and wherein N is the degree of the polynomial that defines the Fibonacci field and the Galois field.

5. The method recited in Claim 1 wherein the reference code state in the Galois field corresponds to the reference code state in the Fibonacci field.

6. The method recited in Claim 5 further comprising the step of:

d) transforming the reference code state from the Fibonacci field to the reference code state in the Galois field.

7. The method recited in Claim 6 further comprising the step of:

e) calculating the Galois field vector corresponding to the desired code offset from the reference code state in the Galois field.

8. The method recited in Claim 6 wherein transforming step d) comprises the following step:

multiplying the field vector representing the reference code state in the Fibonacci field by a transformation matrix to obtain a subsequent field vector representing the reference code state vector in the Galois field.

9. In an electronic device having a processor coupled to a computer readable memory for implementing steps, a method of calculating a transform matrix for transforming a field vector from a second field to a field vector in a first field, the method comprising the steps of:

a) receiving a reference code state chosen for the first field;

b) generating a first field vector of the reference code state;

c) iterating an LFSR state from the first field vector to form a new LFSR state;

d) generating a new field vector from the new LFSR state; and

e) assembling the first field vector and the new field vector into a transform matrix.

10. The method recited in Claim 9 wherein the first field is a Galois field.

11. The method recited in Claim 9 further comprising the step of:

f) identifying an output tap location of an LFSR in the first field from which an output sequence is received.

12. The method recited in Claim 11 further comprising the step of:

g) aligning the reference code state in the first field vector with the output tap location of the LFSR.

13. The method recited in Claim 9 further comprising the step of:

f) repeating steps c) through d) a quantity of N times, wherein N is the degree of the polynomial defining the first field and the second field.

14. The method recited in Claim 13 wherein assembling step e) comprises the following steps:

e1) providing the first field vector as the bottom row in the transform matrix;

e2) providing the new field vector as the next highest row in the transform matrix; and

e3) repeating providing step e2) a total of N-2 times for a total of N rows in the transform matrix.

15. A method of advancing a state of a Galois linear feedback shift register (LFSR) by a code offset, the method comprising the steps of:

a) receiving a Fibonacci mask corresponding to the code offset for the Galois LFSR;

b) loading the Fibonacci mask in the Galois LFSR;

c) iterating the Galois LFSR according to the Fibonacci mask; and

d) receiving an output from the Galois LFSR corresponding to the code offset.

16. The method recited in Claim 15 further comprising the step of:

e) identifying a desired code offset for the Galois LFSR; and

f) selecting the Fibonacci mask that exactly matches the desired code offset.

17. The method recited in Claim 15 further comprising the step of:

e) identifying the desired code offset for the Galois LFSR;

f) selecting a Fibonacci mask that most closely matches the desired code offset; and

g) slewing the Galois LFSR to attain the desired code offset.

18. The method recited in Claim 15 further comprising the step of:

e) storing the Fibonacci mask in memory.

19. The method recited in Claim 15 further comprising the step of:

e) receiving a request to advance the Galois LFSR by the code offset.

20. The method recited in Claim 15 further comprising the step of:

e) calculating the Fibonacci mask corresponding to the desired code offset.

21. An electronic device for generating a mask for a linear feedback shift register (LFSR), the electronic device comprising:

a processor;

a computer readable memory unit coupled to the processor, the computer readable memory containing program instructions stored therein that, when executed via the processor, implements a method of generating the mask for the LFSR, the method comprising the steps of:

a) receiving a desired code offset from a reference code state chosen for a first field;

b) calculating a field vector in the first field with the desired code offset sought in the first field; and

c) transforming the first field vector into a second field vector, the second field vector operable as the mask in the LFSR configured in the first field.

22. The electronic device recited in Claim 21 wherein the first field is a Galois field and the second field is a Fibonacci field.

23. The electronic device recited in Claim 21 wherein transforming step c) comprises the following step:

multiplying the Galois field vector by a transformation matrix to obtain the Fibonacci field vector.

24. The electronic device recited in Claim 23 wherein the transformation matrix is a linear N x N matrix, and wherein N is the degree of the polynomial that defines the Fibonacci field and the Galois field.

25. The electronic device recited in Claim 21 wherein the reference code state in the Galois field corresponds to the reference code state in the Fibonacci field.

26. The electronic device recited in Claim 22 further comprising the step of:

d) transforming the reference code state from the Fibonacci field to the reference code state in the Galois field.

27. The electronic device recited in Claim 26 further comprising the step of:

e) calculating the Galois field vector corresponding to the desired code offset from the reference code state in the Galois field.

28. The electronic device recited in Claim 26 wherein transforming step d) comprises the following step:

multiplying the field vector representing the reference code state in the Fibonacci field by a transformation matrix to obtain a subsequent field vector representing the reference code state vector in the Galois field.

29. An electronic device for generating a mask for a linear feedback shift register (LFSR), the electronic device comprising:

a processor;

a computer readable memory unit coupled to the processor, the computer readable memory containing program instructions stored therein that, when executed via the processor, implements a method of calculating a transform matrix for transforming a field vector from a second field to a field vector in a first field, the method comprising the steps of:

a) receiving a reference code state chosen for the first field;

b) generating a first field vector of the reference code state;

c) iterating an LFSR state from the first field vector;

d) generating a new field vector from the new LFSR state; and

e) assembling the first field vector and the new field vector into a transform matrix.

30. The electronic device recited in Claim 29 wherein the first field is a Galois field.

31. The electronic device recited in Claim 29 further comprising the step of:

f) receiving an output tap location from which an LFSR outputs its sequence.

32. The electronic device recited in Claim 29 further comprising the step of:

f) aligning the reference code state in the first field vector with the output tap location of the LFSR.

33. The electronic device recited in Claim 29 further comprising the step of:

f) repeating steps c) through d) a quantity of N times, wherein N is the degree of the polynomial defining the first field and the second field.

34. The electronic device recited in Claim 33 wherein assembling step e) comprises the following steps:

e1) providing the first field vector as the lowest row in the transform matrix;

e2) providing the new field vector as the next highest row in the transform matrix; and

e3) repeating providing step e2) a total of N-2 times for a total of N rows in the transform matrix.

35. A code generator system comprising:

a Galois linear feedback shift register (LFSR;

a processor coupled to the Galois linear feedback shift register;

a computer readable memory unit coupled to the processor, the computer readable memory containing program instructions stored therein that, when executed via the processor, implements a method of advancing a state of a Galois linear feedback shift register (LFSR) by a code offset, the method comprising the steps of:

a) receiving a Fibonacci mask corresponding to the code offset for the Galois LFSR;

b) loading the Fibonacci mask in the Galois LFSR;

c) iterating the Galois LFSR according to the Fibonacci mask; and

d) receiving an output from the Galois LFSR corresponding to the code offset.

36. The code generator system recited in Claim 35 further comprising the step of:

e) identifying the desired code offset for the Galois LFSR; and

f) selecting the Fibonacci mask that exactly matches the desired code offset.

37. The code generator system recited in Claim 35 further comprising the step of:

e) identifying the desired code offset for the Galois LFSR;

f) selecting the Fibonacci mask that most closely matches the desired code offset; and

g) slewing the Galois LFSR to attain the desired code offset.

38. The code generator system recited in Claim 35 further comprising the step of:

e) storing the Fibonacci mask in memory.

39. The code generator system recited in Claim 35 further comprising the step of:

e) receiving a request to advance the Galois LFSR by the code offset.

40. The code generator system recited in Claim 35 further comprising the step of:

e) calculating a transform matrix corresponding to a Fibonacci LFSR equivalent to the Galois LFSR.

41. The code generator system recited in Claim 40 further comprising the step of:

f) calculating the mask corresponding to the desired code offset using the transform matrix.